IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

JULIA ROBERTSON-ARMSTRONG	:	CIVIL ACTION
	:	
v.	:	
	:	
ROBINSON HELICOPTER COMPANY, INC., et al.	:	NO. 13-2810

MEMORANDUM

Bartle, J. November 19, 2015

Plaintiff Julia Robertson-Armstrong ("Robertson-Armstrong") was severely injured on July 20, 2011 when a helicopter in which she was a passenger crashed in New Jersey. She has sued Robinson Helicopter Company, Inc. ("Robinson"), the manufacturer of the helicopter, as well as Nassau Helicopters, Inc. ("Nassau"), which owned and operated it at the time of the crash.[1] Her complaint includes claims for strict liability, negligence, negligent misrepresentation and omission, and fraud against Robinson and a negligence claim

1. Roberston-Armstrong also sued three related business entities: Textron, Inc. ("Textron"); AVCO Corporation ("AVCO"); and Lycoming, a/k/a Lycoming Engines, a/k/a Lycoming Engines Operating Division of AVCO Corporation, a/k/a Textron Lycoming Reciprocating Engine Division ("Lycoming"). She alleged that Lycoming had manufactured the engine of the subject helicopter and its "fuel related components," that Lycoming was a division of AVCO, and that Textron was liable for AVCO's acts under a participation theory. On April 23, 2014 the court dismissed Robertson-Armstrong's claims against Lycoming and Textron. The parties subsequently stipulated to the dismissal of Robertson-Armstrong's claims against AVCO and Nassau's crossclaims against AVCO and Textron.

against Nassau. Robinson and Nassau subsequently filed crossclaims against one another, each asserting that the other is liable for the harm alleged.

Robinson has filed a number of pretrial motions challenging Robertson-Armstrong's experts under Daubert v. Merrel Dow Pharmaceuticals, 509 U.S. 579 (1993), and Rule 702 of the Federal Rules of Evidence. We will now consider the motion of Robinson to preclude Robertson-Armstrong's expert Michael Kleinberger, Ph.D. ("Dr. Kleinberger") from offering certain opinions at trial.

I.

The court has a "gatekeeping" function in connection with expert testimony. See Gen. Elec. Co., et al. v. Joiner, 522 U.S. 136, 142 (1997); see also Daubert, 509 U.S. at 589. Rule 702 of the Federal Rules of Evidence provides:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. As our Court of Appeals has repeatedly noted, Rule 702 embodies three requirements: qualification,

reliability, and fit. Pineda v. Ford Motor Co., 520 F.3d 237, 244 (3d Cir. 2008).

An expert is qualified if he "possess[es] specialized expertise." Schneider ex rel. Estate of Schneider v. Fried, 320 F.3d 396, 404 (3d Cir. 2003). This does not necessarily require formal credentials, as "a broad range of knowledge, skills, and training qualify an expert," and may include informal qualifications such as real-world experience. In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 741 (3d Cir. 1994). The qualification standard is a liberal one, and an expert may be sufficiently qualified under Rule 702 even if "the trial court does not deem the proposed expert to be the best qualified or because the proposed expert does not have the specialization that the court considers most appropriate." Holbrook v. Lykes Bros. S.S. Co., 80 F.3d 777, 782 (3d Cir. 1996).

To determine reliability, we focus not on the expert's conclusion but on whether that conclusion is "based on the methods and procedures of science rather than on subjective belief or unsupported speculation." Schneider, 320 F.3d at 404 (internal quotation marks omitted). Our analysis may include such factors as:

> (1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the

> technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.

Pineda, 520 F.3d at 247-48.

"[T]he test of reliability is flexible" and this court possesses a broad latitude in determining reliability. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141-42 (1999). To be reliable under Daubert, a party need not prove that his or her expert's opinion is "correct." Paoli, 35 F.3d at 744. Instead:

> As long as an expert's scientific testimony rests upon good grounds, based on what is known, it should be tested by the adversary process –competing expert testimony and active cross–examination – rather than excluded from jurors' scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies.

United States v. Mitchell, 365 F.3d 215, 244 (3d Cir. 2004) (quoting Ruiz–Troche v. Pepsi Cola Bottling Co., 161 F.3d 77, 85 (1st Cir. 1998)).

As for "fit," expert testimony must also "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. Thus, to "fit," such evidence must bear some relation to the "particular disputed factual issues in the case." United States v. Downing, 753 F.2d 1224, 1237 (3d Cir. 1985). Accordingly, this factor has been

described as one of relevance. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 591 (1993); Paoli, 35 F.3d at 745 & n.13.

II.

Robertson-Armstrong retained Dr. Kleinberger to offer opinions on topics which include the design and purported defectiveness of the subject helicopter, particularly its seats, and the availability of safer alternative designs.

Dr. Kleinberger's work focuses primarily on biomechanics and injury causation. He holds a Bachelor's degree in mechanical engineering and advanced degrees, including a Ph.D., in biomedical engineering with a concentration in biomechanics. From 1991 until 1998 he was employed by the Biomechanics Research Division of the National Highway Traffic Safety Administration ("NHTSA"), where he conducted research on vehicle crashworthiness and evaluated the effectiveness of various safety systems. He states in an affidavit that his position at NHTSA required him to "evaluate[] the design of safety systems intended to protect the occupants in the event of a collision." After leaving NHTSA, Dr. Kleinberger established a biomechanics research center at Johns Hopkins University. There, he spent 16 years in a managerial role, overseeing research on topics which included "the design, fabrication, testing and evaluation of human surrogates and occupant protection systems for a wide range of vehicles including automobiles, trains, helicopters and military ground vehicles." Dr. Kleinberger has also served as

the Chief Technology Officer of Cerviguard Seating Systems Corp., which designs and fabricates safety systems including vehicle seats.

In his report dated September 28, 2015, Dr. Kleinberger opines on the causes of Robertson-Armstrong's injuries and whether those injuries would have been mitigated or avoided through the use of alternative designs. He also details the methods upon which he relied in formulating those opinions. According to Dr. Kleinberger, his analysis involved an inspection of the wreckage of the subject helicopter and a review of an accident summary, Robertson-Armstrong's medical records, and the deposition testimony of a Robinson engineering official, among other items. Dr. Kleinberger also used the results of crash velocity calculations performed by another of Robertson-Armstrong's experts, Colin Sommer ("Sommer"), to determine whether Robertson-Armstrong would have sustained the same injuries had she been seated in a differently-designed seating system. Drawing on this assessment and on his "experience and knowledge of vehicle safety systems, occupant protection, and injury biomechanics," Dr. Kleinberger concludes in his report that Robertson-Armstrong's injuries were proximately caused by the crash, that the "extent and severity" of those injuries was exacerbated "by the lack of adequate energy management and attenuation in the design," and that the risk of these injuries "would have been eliminated or, at a minimum,

substantially reduced" through the use of alternative seating system designs.

III.

Robinson concedes that Dr. Kleinberger should be permitted to testify on "biomechanics and injury causation in terms of how Plaintiff sustained her injuries in the subject accident." It maintains, however, that Dr. Kleinberger lacks the qualifications to offer opinions as to purported design defects, lack of crashworthiness, or allegedly safer alternative designs. Robinson further argues that Dr. Kleinberger's conclusions about these topics are not scientifically reliable and are conclusory.[2]

Dr. Kleinberger's background in biomechanics and injury causation, which is detailed above, is extensive. In addition to holding a Ph.D. in biomedical engineering with a focus in biomechanics, he has more than 24 years of experience in biomechanical research and has contributed to the development of seating systems designed to protect vehicle occupants from injury. This background clearly qualifies Dr. Kleinberger to offer his opinions about the relationship between the design of the subject helicopter and the injuries sustained by Robertson-Armstrong. Likewise, it qualifies him to testify about whether the use of certain alternative designs would have mitigated

2. Robinson does not appear to challenge the "fit" of Dr. Kleinberger's testimony to the facts of this particular case. See Pineda, 520 F.3d at 244.

Robertson-Armstrong's injuries. Robertson-Armstrong underscores this in her brief by noting that Dr. Kleinberger "does not opine about the operational, piloting, or flying design capabilities" of the subject helicopter, but only about its "design and seats . . . limited to [Robertson-Armstrong]'s injurues." Contrary to Robinson's arguments, it is immaterial that Dr. Kleinberger's research has not emphasized the design of helicopters and helicopter seats. Robinson has offered no reason why Dr. Kleinberger's familiarity with seat design in other vehicles falls short of qualifying him to testify about the design and use of safe helicopter seats. In sum, Dr. Kleinberger unquestionably possesses the "specialized expertise" necessary to provide opinions on the subjects for which his testimony is offered. See Schneider, 320 F.3d at 404.

We next address Robinson's challenge to the reliability of Dr. Kleinberger's conclusions. Robinson first contends that Dr. Kleinberger's opinions must be precluded as unreliable because they are improperly predicated on the opinions of other experts retained by Robinson-Armstrong, specifically Sommer and McSwain Engineering, about the design of the subject helicopter and the availability of allegedly safer alternative designs. We have determined that the opinions of those experts are reliable. Moreover, it is permissible for Dr. Kleinberger to base his opinion in part on the opinions of other experts in this matter. See Fed.

R. Evid. 703; Keller v. Feasterville Family Health Care Ctr., 557 F. Supp. 2d 671, 681 (E.D. Pa. 2008). To the extent that any discrepancy exists in the findings made by Sommer and used by Dr. Kleinberger, this discrepancy may be "tested by the adversary process" on cross-examination. See Mitchell, 365 F.3d at 244.

Robinson also urges that Dr. Kleinberger's opinions must be precluded because he has not provided any basis for his conclusions that certain alternative designs would have mitigated the injuries sustained by Robertson-Armstrong. According to Robinson, Dr. Kleinberger has offered nothing more than "bare assertions" about the potential effects of such designs.

To the contrary, Dr. Kleinberger's report explains in detail why the use of alternative seat designs would have reduced or prevented Robertson-Armstrong's injuries. For example, Dr. Kleinberger devotes approximately one page of his 11-page report to a discussion of the use and effectiveness of energy absorbing seat materials, describing how such materials can reduce the risk of spinal injury to the seat's occupant. A portion of Dr. Kleinberger's report is also devoted to explaining why the design of the seatbelt used by Robertson-Armstrong may have been the reason she sustained a sternum fracture and a laceration on her chin. Finally, as noted above, Dr. Kleinberger looks to the velocity calculations completed by Sommer to conclude that a helicopter which experienced the same crash but used a safer

alternative design would have better protected its occupants. Far from being "bare assertions," Dr. Kleinberger's conclusions clearly "rest[] upon good grounds, based on what is known." See Mitchell, 365 F.3d at 244.

In sum, Dr. Kleinberger is qualified to offer his opinions about the design of the Robinson R22 helicopter and its seats, and the use and effectiveness of alternative designs, as these subjects relate to the injuries sustained by Robertson-Armstrong. Further, the methodology used by Dr. Kleinberger in formulating those opinions is reliable.

Robinson's motion to preclude certain of Dr. Kleinberger's opinions will therefore be denied.